Microsoft

Democratizing AI

Transform data into actionable insights

Some Transformational Changes

Product recommendation

The average size of a single cart has decreased

Provide personalized digital content to shoppers

Increase cart size

ASOS delivers 15.4 million personalized experiences with 33 orders per second

Predictive maintenance

Unplanned downtime results in cost overruns

Predict when maintenance should be performed

Minimize downtime

Hybrid solution predicts onboard water usage, saving $200k/ship/year

Demand forecasting

Solar energy production is inconsistent

Align energy supply with the optimal markets

Maximize revenue

Distributed power generation increases revenue by over €100 million

But not everyone has seen success

85% of organizations have started data-driven initiatives, but only **37%** report success[1]

Why?

Technology demands a power-intensive infrastructure

Data is exponentially increasing in volume

Security, latency, and degradation concerns from data transfer

ML and AI models are difficult to deploy to the edge and applications

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1: ESG, 2017

The Microsoft AI-Data platform

Services

CONVERSATIONAL AI

Bot Framework

TRAINED SERVICES

Cognitive

CUSTOM SERVICES

Azure Machine Learning

Infrastructure

AI ON DATA

Cosmos DB

SQL DB

SQL DW

Data Lake

AI COMPUTE

ark

DSVM

Batch AI

ACS

Edge

CPU, GPU, FPGA+

Tools

CODING & MANAGEMENT TOOLS

VS Tools for AI

Azure ML Studio

Azure ML Workbench

Others (PyCharm, ...tebooks...)

DEEP LEARNING FRAMEWORKS

3rd Party

Cognitive Toolkit

TensorFlow

Caffe

Others (Scikit-learn, MXNet, Keras, Chainer, Gluon...)

Cognitive Services

Vision

- Custom Vision Service
- Computer Vision
- Content Moderator
- Emotion
- Face
- Video
- Video Indexer

Speech

- Custom Speech Service
- Bing Speech
- Speaker Recognition

Language

- Bing Spell Check
- Language Understanding Intelligent Service
- Linguistic Analysis
- Text Analytics
- Translator
- Web Language Model

Knowledge

- Custom Decision Service
- Academic Knowledge
- Entity Linking Service
- Knowledge Exploration Service
- Recommendations
- QnA Maker

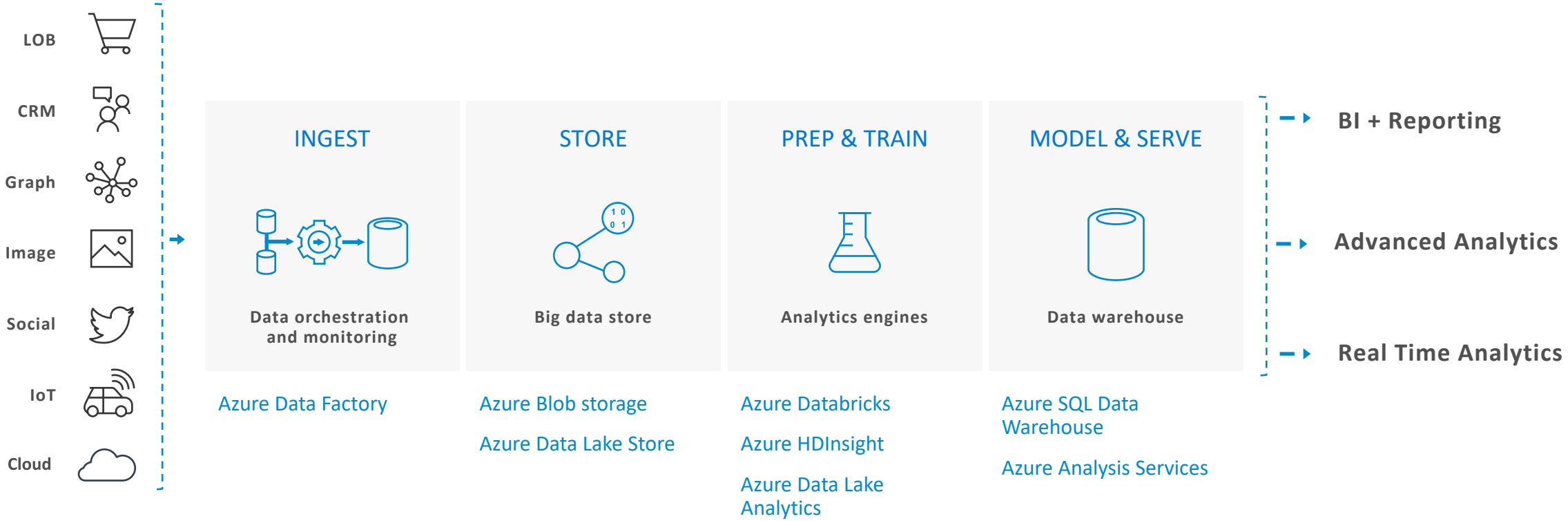
Search

- Bing Custom Search
- Bing Autosuggest
- Bing Image Search
- Bing News Search
- Bing Video Search
- Bing Web Search
- Bing Entity Search

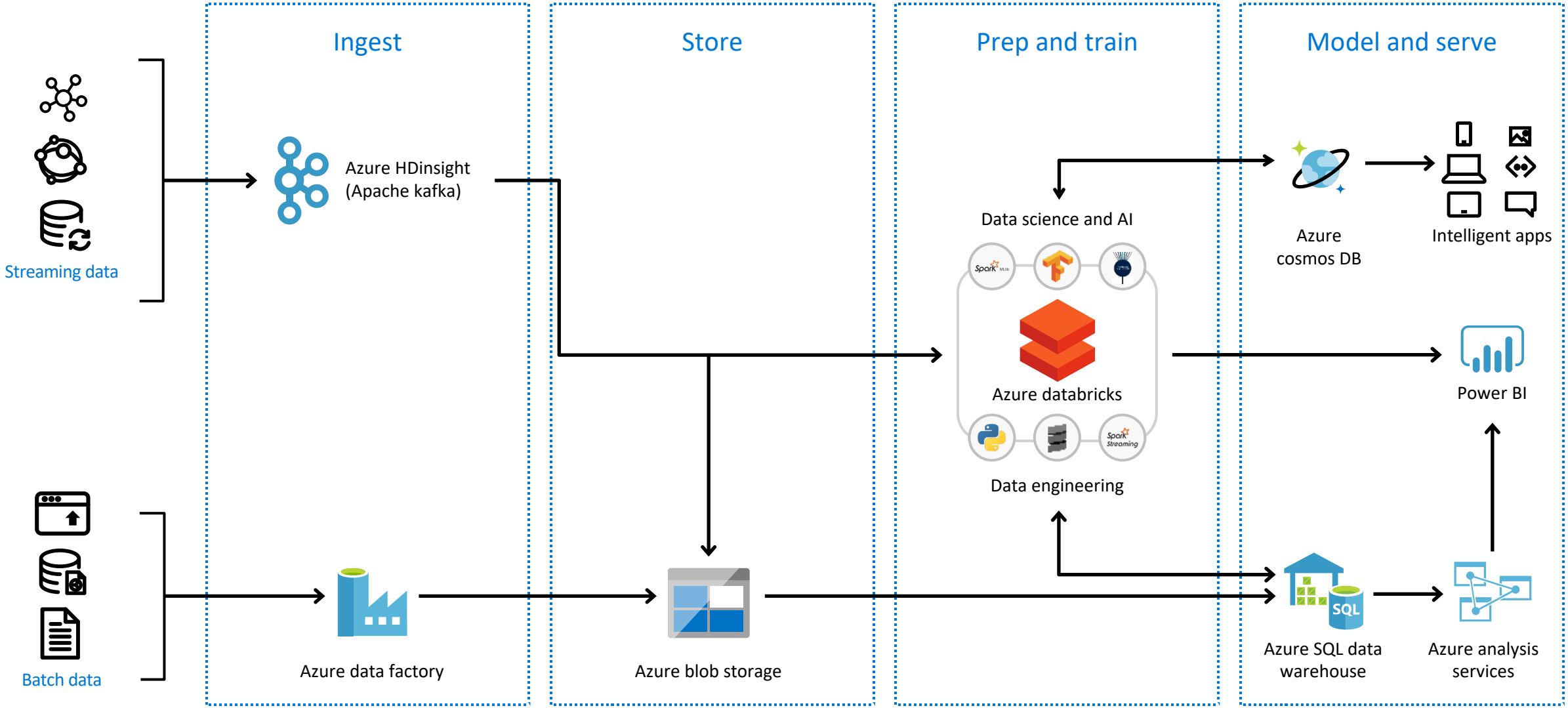
Labs

- Abu Dhabi – distance matrix
- Cuzco – events
- Joburg – routing
- Nanjing – isochrones
- Prague – gestures
- Wollongong – location

Great AI Needs Great Data and Cloud Scale Analytics



A recommended reference architecture



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“We can’t afford to look at this future with uncritical eyes.”

– The Future Computed

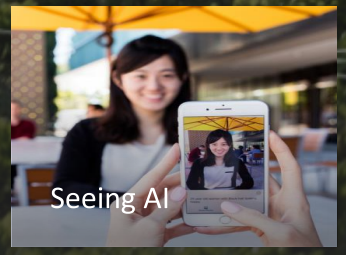
Brad Smith
@BradSmi

harryshum
@harryshum

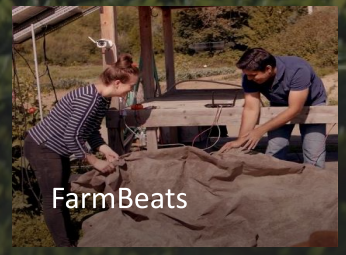
Amplifying human ingenuity with intelligent technology

Microsoft.com/AI

Inclusion



Education

Healthcare

Earth